CLAIMS

1. (Amended) An electrode assembly for a micro-optics solar concentrator, the apparatus comprising:

a) an array of micro-mirrors rotatably disposed in a substrate;

b) electric dipoles in said rotatable micro-mirrors;

c) said apparatus having a plurality of addressable elements;

d) two bus bars connected to opposite poles of a voltage source;

e) at least two sets of opposing rung electrodes which interlace orthogonally within each plane, and criss-cross each other and are separated by dielectrics;

f) said rung electrodes electrically connected to at least two of said bus bars for electric field group coupling to said ~~induced~~ electric dipoles by means of said voltage source; and

g) microprocessor means for selectively addressing each pair of said bus bars.

2. (Original) The apparatus of claim 1, wherein there are at least three independent voltage sources connected to at least three pairs of rung electrodes.

3. (Original) The apparatus of claim 1, wherein said array of micro-mirrors are disposed between a top transparent electrode opposite a bottom electrode connected to an independent voltage source

4. (Original) The apparatus of claim 1, wherein said array of micro-mirrors are disposed between a top grid electrode opposite a bottom electrode connected to an independent voltage source.

5. (Original) The apparatus of claim 1, wherein said electric dipoles are induced in each of said micro-mirrors by said electric field.

6. (Amended) The apparatus of claim 1, wherein an electret is placed adjacent to each micro-mirror so that its permanent electric dipole is parallel to said ~~induced~~ electric dipole.

7. (Original) The apparatus of claim 1, wherein a group of said micro-mirrors are given the same alignment.

8. (Original) A method of aligning groups of an array of rotatable mini-mirrors in a light modulating apparatus comprising the steps of:

a) selectively inducing an electric dipole in each of said rotatable mini-mirrors;

b) producing a grid array of independently orientable electric fields for coupling to the induced electric dipoles by means of sets of orthogonally criss-crossing opposing rung electrodes; and

c) selectively aligning at least one of said rotatable mini-mirrors by means of said electric fields.

9. (Original) The method of claim 8 further comprising the step of applying at least three independent voltages to at least three pairs of rung electrodes.

10. (Original) The method of claim 8 further comprising the step of placing an electret adjacent to each mini-mirror so that its permanent electric dipole is parallel to said induced electric dipole.

11. (Original) The method of claim 8 further comprising the step of energizing a top transparent electrode opposite a bottom electrode connected to an independent voltage source, between which electrodes are disposed in said array of micro-mirrors.

12. (Original) The method of claim 8 further comprising the step of energizing a top grid electrode opposite a bottom electrode connected to an independent voltage source, between which electrodes are disposed in said array of micro-mirrors.

13. (Original) The method of claim 8 further comprising the step of giving said mini-mirrors the same alignment as a group .

14. (Amended) Apparatus for focussing and directing reflected light comprising:

a) an array of micro-mirrors rotatably disposed in a substrate;

b) electric dipoles in said rotatable micro-mirrors;

c) said apparatus having a plurality of addressable elements;

d) two bus bars connected to opposite poles of a voltage source;

e) at least two sets of orthogonally criss-crossing rung electrodes electrically connected to at least two of said bus bars for electric field group coupling to said ~~induced~~ electric dipoles; and

f) microprocessor means for selectively addressing each pair of said bus bars; and

g) means for selectively establishing independent voltage differences between each pair of said bus bars by means of said voltage source.

15. (Original) The apparatus of claim 14, wherein there are at least three independent voltage sources connected to at least three pairs of rung electrodes.

16. (Original) The apparatus of claim 14, wherein said array of micro-mirrors are disposed between a top transparent electrode opposite a bottom electrode connected to an independent voltage source

17. (Original) The apparatus of claim 14, wherein said array of micro-mirrors are disposed between a top grid electrode opposite a bottom electrode connected to an independent voltage source.

18. (Original) The apparatus of claim 14, wherein said electric dipoles are induced in each of said micro-mirrors by said electric field.

19. (Original) The apparatus of claim 14, wherein an electret is placed adjacent to each micro-mirror so that its permanent electric dipole is parallel to said ~~induced~~ electric dipole.

20. (Amended) The apparatus of claim ~~14~~14, wherein a group of said micro-mirrors are given ~~the same alignment~~ a small optical concavity.

CLAIMS

1. (Amended) An electrode assembly for a micro-optics solar concentrator, the apparatus comprising:

a) an array of micro-mirrors rotatably disposed in a substrate;

b) electric dipoles in said rotatable micro-mirrors;

c) said apparatus having a plurality of addressable elements;

d) two bus bars connected to opposite poles of a voltage source;

e) at least two sets of opposing rung electrodes which interlace orthogonally within each plane, and criss-cross each other and are separated by dielectrics;

f) said rung electrodes electrically connected to at least two of said bus bars for electric field group coupling to said electric dipoles by means of said voltage source; and

g) microprocessor means for selectively addressing each pair of said bus bars.

2. (Original) The apparatus of claim 1, wherein there are at least three independent voltage sources connected to at least three pairs of rung electrodes.

3. (Original) The apparatus of claim 1, wherein said array of micro-mirrors are disposed between a top transparent electrode opposite a bottom electrode connected to an independent voltage source

4. (Original) The apparatus of claim 1, wherein said array of micro-mirrors are disposed between a top grid electrode opposite a bottom electrode connected to an independent voltage source.

5. (Original) The apparatus of claim 1, wherein said electric dipoles are induced in each of said micro-mirrors by said electric field.

6. (Amended) The apparatus of claim 1, wherein an electret is placed adjacent to each micro-mirror so that its permanent electric dipole is parallel to said electric dipole.

7. (Original) The apparatus of claim 1, wherein a group of said micro-mirrors are given the same alignment.

8. (Original) A method of aligning groups of an array of rotatable mini-mirrors in a light modulating apparatus comprising the steps of:

a) selectively inducing an electric dipole in each of said rotatable mini-mirrors;

b) producing a grid array of independently orientable electric fields for coupling to the induced electric dipoles by means of sets of orthogonally criss-crossing opposing rung electrodes; and

c) selectively aligning at least one of said rotatable mini-mirrors by means of said electric fields.

9. (Original) The method of claim 8 further comprising the step of applying at least three independent voltages to at least three pairs of rung electrodes.

10. (Original) The method of claim 8 further comprising the step of placing an electret adjacent to each mini-mirror so that its permanent electric dipole is parallel to said induced electric dipole.

11. (Original) The method of claim 8 further comprising the step of energizing a top transparent electrode opposite a bottom electrode connected to an independent voltage source, between which electrodes are disposed in said array of micro-mirrors.

12. (Original) The method of claim 8 further comprising the step of energizing a top grid electrode opposite a bottom electrode connected to an independent voltage source, between which electrodes are disposed in said array of micro-mirrors.

13. (Original) The method of claim 8 further comprising the step of giving said mini-mirrors the same alignment as a group .

14. (Amended) Apparatus for focussing and directing reflected light comprising:
a) an array of micro-mirrors rotatably disposed in a substrate;
b) electric dipoles in said rotatable micro-mirrors;
c) said apparatus having a plurality of addressable elements;
d) two bus bars connected to opposite poles of a voltage source;
e) at least two sets of orthogonally criss-crossing rung electrodes electrically connected to at least two of said bus bars for electric field group coupling to said electric dipoles; and
f) microprocessor means for selectively addressing each pair of said bus bars; and
g) means for selectively establishing independent voltage differences between each pair of said bus bars by means of said voltage source.

15. (Original) The apparatus of claim 14, wherein there are at least three independent voltage sources connected to at least three pairs of rung electrodes.

16. (Original) The apparatus of claim 14, wherein said array of micro-mirrors are disposed between a top transparent electrode opposite a bottom electrode connected to an independent voltage source

17. (Original) The apparatus of claim 14, wherein said array of micro-mirrors are disposed between a top grid electrode opposite a bottom electrode connected to an independent voltage source.

18. (Original) The apparatus of claim 14, wherein said electric dipoles are induced in each of said micro-mirrors by said electric field.

19. (Original) The apparatus of claim 14, wherein an electret is placed adjacent to each micro-mirror so that its permanent electric dipole is parallel to said ~~induced~~ electric dipole.

20. (Amended) The apparatus of claim ~~1~~14, wherein a group of said micro-mirrors are given a small optical concavity.

Respectfully submitted,

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